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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,792	09/29/2003	Robert P. Mahoney	16426/09011	2994

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EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,792

Applicant(s)

MAHONEY ET AL.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-58 is/are pending in the application.
- 4a) Of the above claim(s) 21-58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-5 and 8-58 are pending.

Election/Restrictions

1. Applicant's election of the invention of Group I and the species corresponding to aniline/formaldehyde/cationic organic polymer such as cationic acrylamide in the reply filed on January 9, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim interpretation

3. Applicants claim a composition "comprising a flocculant and/or coagulant and a polyarylamine polymer formed by the reaction of less than 2 moles of aldehyde per mole of aryl amine in the presence of an acid in an aqueous solution". Applicants define ([0019] of the instant specification) the term "arylamine" as: "The arylamine of the present invention can be any aromatic amine that is capable of reaction with an aldehyde to form a polymer.". The melamine compounds read on said definition since they are aromatic, capable of reaction with formaldehyde to form a polymer.

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Furthermore, the compositions claimed are drafted in product-by-process format. Product-by-process claims are examined based on the product rather than the process steps in the process of making. The process steps are given patentable weight only to the extent said process steps necessarily impart structure to the product. Attention is directed to MPEP § 2113.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-5 and 8-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is indefinite regarding the metes and bounds of the subject matter sought for patent since it is unclear whether the "flocculant and/or coagulant" is intended to modify or define the function of the polyarylamine polymer or is a further ingredient. Attention is further directed to claim 20, wherein melamine formaldehyde is claimed as the flocculant.

Furthermore, the claimed ratio of the amine modifier :arylamine in claims 17, 18 , and 19 are indefinite where the amine modifier and the aryl amine read on the same compounds, e.g., phenylenediamine (claim 1) and polyamines (claim 10).

In claim 5, it is unclear how an hexamethylenetetramine is a aldehyde releasing agent.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 8-12, and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Selvarajan et al, US 4,422,944. Selvarajan et al (example 3, aniline ~ 0.1175 moles and formaldehyde ~ 0.142 moles, HCl ~ 0.226 moles; and Table 1, wherein A and F have a ratio of 2 : 2, e.g., A-HMDA-F ~ 2:1:2) discloses the products comprising the reaction products of aniline and formaldehyde added as flocculants to treat turbid waters. Since the polymers are flocculants as required by claim 1, said polymers read on the claimed “flocculants and/or coagulants”.

Claim 20 is included in this rejection since the polymers disclosed in the Selvarajan et al reference are organic flocculants. During patent examination, the claims are given their broadest reasonable interpretation consistent with the specification. While applicants define preferred species, said species are alternatively claimed with the generic language, “organic flocculants”, also set forth.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-5 and 8-20 are rejected under 35 U.S.C. 103(a) as obvious over Selvarajan et al, US 4,422,944, in view of Rey et al, US 5,240,509.

Selvarajan et al (example 3, aniline ~ 0.1175 moles and formaldehyde ~ 0.142 moles, HCl ~ 0.226 moles; and Table 1, wherein A and F have a ratio of 2 : 2, e.g., A-HMDA-F ~ 2:1:2) discloses the products comprising the reaction products of aniline and formaldehyde added as flocculants to treat turbid waters.

To the extent the Selvarajan et al differ from the claims in the combination of the Selvarajan et al polymers with an additional flocculant and/or coagulant, said combination would have been obvious to one having ordinary skill in the art at the time of the invention for the advantage of water clarification.

Rey et al discloses treating water with compositions comprising a combination of melamine-formaldehyde and an inorganic flocculant or nonionic flocculant, e.g., polymethacrylamide. Rey et al (column 6-7, lines 63-19) disclose the molar ratio of the

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melamine to formaldehyde is 1:1 to 1:6, preferably 1:1 to 1:3. Said ranges encompass and clearly envisage the claimed ratio of $1 : < 2$.

Regarding claim 16, see column 7, lines 20-26. Claims 17 and 19 are included herein since the ratio would read on the claims depending on how the melamine was attributed to the overlapping components (see above).

It is generally *prima facie* obvious to use in combination two or more ingredients that have previously been used separately for the same purpose in order to form a third composition useful for that same purpose. In re Kerkhoven, 626 F.2d 846, 205 USPQ 1069 (CCPA 1980); In re Pinten, 459 F.2d 1053, 173 USPQ 801 (CCPA 1972); In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971); In re Crockett, 279 F.2d 274, 126 USPQ 186 (CCPA 1960). As stated in Kerkhoven and Crockett, the idea of combining them flows logically from their having been individually taught in the prior art.

These references are combinable since they teach clarification of water employing related polymers. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ a combination of flocculant and/or coagulant with the polymers of Selvarajan et al as a point of law and/or for the advantage of a broader spectrum precipitation by known flocculant and/or coagulant agents.

Response to Arguments

11. Applicant's arguments filed July 24, 2006 have been fully considered but they are not persuasive.

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12. Applicants (page 10) assert the flocculant and/or coagulant is an element of claim 1 that is in addition to the polyarylamine. Applicants' attention is directed to 37 CFR 1.75(i).

13. Applicants' (page 10) assertions regarding the amine modifier in the specification are not probative for the indefiniteness of the claims since the skilled artisan can not read limitations from the specification into the claims. While the specification may be referred for guidance or to reasonably interpret the claims, the breadth of the materials as the aryl amine and the amine modifier overlap and render the ratios indefinite. It is unclear how one skilled in the art should attribute the amounts of materials meeting the limitations of claim 1 and claim 10 to determine the ratios of claims 17-19.

Furthermore, since the claims are drafted in product-by-process format, the characterization of the arylamine as a reactant and any additional amine as an amine modifier has little or no patentable weight to the composition that employs an amine, which meets the structural limitations of said respective amines. An amine added to the reaction mixture as well as post reacted is an amine modifier as well as an amine reactant, resulting in the claimed product.

14. Applicants (page 11) assert hexamethylene is a formaldehyde releasing agent as shown by McDonnell et al, Clin Microbiol Rev, 12(1):147-179(1999) and several other citations but fail to provide any such references. Said rejection of claim 5 is maintained. It is unclear from where and under what conditions formaldehyde is being released.

15. Applicants (page 12) assert the Selvarajan et al does not meet the claim since it does not include the multiple elements of flocculant and/or coagulant and polyarylamine

polymer. This has not been deemed persuasive since the polyarylamine polymer has the function of a flocculant and/or coagulant. Since the terms flocculant and coagulant are descriptive, applicants do not set forth separate elements of the claim in accordance with the rule (37 CFR 1.75(i)), and claims are read in their broadest reasonable interpretation during prosecution, the polymers meets the claimed scope.

Applicants arguments regarding paragraph 0055 have not been deemed persuasive since the teaching that the polymer can be used alone suggest its role as the flocculant and/or coagulant claimed. Furthermore, the claims should be definite absent a reading of limitations into the claims.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

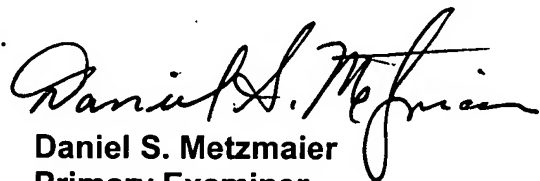
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM